

INTERNATIONAL SEARCH REPORT

International Application No.
PCT/EP2005/004057

A. CLASSIFICATION OF SUBJECT MATTER IPC 7 E21C35/197		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) IPC 7 E21C		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the International search (name of data base and, where practical, search terms used) EPO-Internal		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DE 29 54 400 C1 (VOEST-ALPINE AG, WIEN, AT) 10 July 1986 (1986-07-10) column 3, lines 12-21	1-8
A	US 4 684 176 A (DEN BESTEN ET AL) 4 August 1987 (1987-08-04) column 6, lines 14-20; figures 8,9	1-8
A	DE 43 22 401 A1 (BETEK BERGBAU- UND HARTMETALLTECHNIK KARL-HEINZ SIMON GMBH & CO KG, 78) 12 January 1995 (1995-01-12) cited in the application the whole document	1-8
A	US 4 915 455 A (O'NEILL ET AL) 10 April 1990 (1990-04-10) figure 3	1-8
<input type="checkbox"/> Further documents are listed in the continuation of box C. <input checked="" type="checkbox"/> Patent family members are listed in annex.		
* Special categories of cited documents : 'A' document defining the general state of the art which is not considered to be of particular relevance 'E' earlier document but published on or after the International filing date 'L' document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) 'O' document referring to an oral disclosure, use, exhibition or other means 'P' document published prior to the International filing date but later than the priority date claimed 'T' later document published after the International filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention 'X' document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone 'Y' document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. 'd' document member of the same patent family		
Date of the actual completion of the International search 29 June 2005		Date of mailing of the International search report 08/07/2005
Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax (+31-70) 340-3016		Authorized officer Garrido Garcia, M

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